

Amendments to the Specification:

Please replace the paragraph, beginning at page 1, line 11, with the following rewritten paragraph:

The present invention relates to a semiconductor differential circuit used for a high-frequency circuit of, for example, a portable telephone ~~and so on~~, an oscillation apparatus, an amplifying apparatus and a switching apparatus using the semiconductor differential circuit, and a semiconductor differential circuit placement method.

Please replace the paragraph, beginning at page 1, line 19, with the following rewritten paragraph:

~~In conjunction with~~ With the rapid diffusion-dissemination of portable telephones, it is ~~has becoming~~ become increasingly necessary to miniaturize ~~a the~~ radio portion thereof. For that reason, it is a trend in recent years to render the radio portion as an IC. To embody the radio portion as an IC, it is necessary to embody as ICs an oscillator and a low noise amplifier which were manufactured with discrete parts and modules in the past.

Please replace the paragraph, beginning at page 2, line 1, with the following rewritten paragraph:

Fig. 12 shows an example of a circuit embodied as an IC of an oscillation apparatus in the past. In the circuit shown in Fig. 12, a coil 1002 and a coil 1003 are connected in series, and a power supply 1001 is connected to a connection point of the coil 1002 and coil 1003. A series circuit of the coil 1002 and coil 1003 has a circuit to which switching elements 1006 and 1007 are connected in series via DC blocking capacitors 1004 and 1005 and a circuit to which variable capacity elements 1008 and 1009 are connected in series via DC blocking capacitors 1025 and 1026 connected in parallel thereto. ~~And a~~ A negative resistance circuit formed by MOSFETs 1010 and 1020 is connected to a resonant circuit ~~constituted~~ formed as above so that the circuit as a whole is formed as a differential oscillator. The switching elements 1006 and 1007 are connected with a control voltage terminal 13 so that a frequency band of a calling frequency can be switched by a control voltage applied to the control voltage terminal 13.

Please replace the paragraph, beginning at page3, line 1, with the following rewritten paragraph:

In the case where the oscillator shown in Fig. 12 is formed on a silicon substrate (not shown), however, a parasitic capacitance 1023 and a parasitic resistance 1024 are formed between it and the substrate on a drain 1021 side. Therefore, as shown in Fig. 14, the coil 1003 is equivalent to a parallel connection circuit to the series circuit of the parasitic capacitance 1023 and parasitic resistance 1024 as to a high-frequency signal component. Thus, if influenced by the parasitic capacitance 1023 and parasitic resistance 1024, a characteristic of the resonant circuit becomes a blunt one as shown ~~in by~~ the broken line which ~~should was~~ originally ~~be~~ the one shown in full line as shown in Fig. 15. To be more specific, Q of the resonant circuit deteriorates and C/N deteriorates.

Please replace the paragraph, beginning at page 3, line 14, with the following rewritten paragraph:

In the case where an amplifier circuit shown in Fig. 13 is formed on the silicon substrate, the parasitic capacitance 1023 and parasitic resistance 1024 are similarly formed likewise between it and the substrate on the drains 1021 and 1022 side of the MOSFETs. Therefore, a high-frequency signal leaks to the parasitic resistance 1024 via the parasitic capacitance 1023. And a part of the high-frequency signal is lost due to influence of the parasitic resistance. Consequently, a noise characteristic deteriorates due to influence of a parasitic component of a gate, and a distortion characteristic deteriorates due to influence of the parasitic component of a drain.

Please replace the paragraph, beginning at page 4, line 1, with the following rewritten paragraph:

In the case where a switching element is formed on the silicon substrate, the parasitic resistance and parasitic capacitance are formed as described above, consequently leading to a loss on turning on the switching element. When used in combination with the above oscillator for instance, in an ON state of the switching element, the resonant circuit is further influenced by the parasitic resistance and parasitic capacitance via the switching element, ~~so that~~ Thus, the Q-value further becomes blunt and the characteristic deteriorates.

Please replace the paragraph, beginning at page 5, line 24, with the following rewritten paragraph:

A further solution proposes a ~~constitution in which~~ a contact for grounding the silicon substrate ~~is placed~~ as close as possible to the MOSFETs. Fig. 17 is a plan view showing a configuration of such multi-finger type MOSFETs. In the configuration shown in Fig. 17, a source electrode 1032 in a longitudinal shape is placed, a gate electrode 1033 in a longitudinal shape is placed to be adjacent to the source electrode 1032, and a drain electrode 1034 in a longitudinal shape is placed to be adjacent to the gate electrode 1033. And a contactor 1035 connected to a silicon substrate wiring 1036 is placed close to the drain electrode 1034. The silicon substrate wiring 1036 is connected to an earth electrode. It is possible, by such a configuration, to reduce the resistance value of the parasitic resistance 1024 from the drain electrode 1034 to the earth electrode so as to improve the characteristic of the Q-value in the oscillating circuit for the above-mentioned reason. It is also possible, in the amplifier circuit, to curb the characteristic deterioration by reducing the parasitic resistance 1024.

Please replace the paragraph, beginning at page 26, line 10, with the following rewritten paragraph:

Fig. 1(a) is a plan view ~~(Fig. 1(a))~~ and Fig. 1(b) is a sectional view ~~(Fig. 1(b))~~ of a multi-finger type semiconductor differential circuit according to a first embodiment of the present invention. The semiconductor differential circuit shown in Figs. 1(a)-1(b) has a first drain electrode D1 in a longitudinal shape placed on a semiconductor substrate 1, a gate electrode G1 in a longitudinal shape which is an example of a first gate electrode of the present invention is placed to be adjacent to the drain electrode D1 on both sides of the drain electrode D1, and a source electrode S in a longitudinal shape which is an example of a first source electrode of the present invention is placed to be adjacent to each gate electrode G1. To be

more specific, a configuration having the source electrode S, gate electrode G1, drain electrode D1, gate electrode G1 and source electrode S is an example showing the configuration of a first semiconductor device of the present invention.

Please replace the paragraph, beginning at page 27, line 16, with the following rewritten paragraph:

Here, if the above circuit comprising the first semiconductor device and second semiconductor device of the present invention is a first unit circuit, the circuit shown in Fig. 1 has the configuration in which a 1st first unit circuit and a 2nd first unit circuit are adjacently placed. In Figs. 1(a)-1(b), the source electrode S at the right edge of the first semiconductor device and the source electrode S at the left edge of the second semiconductor device are shared. And the source electrode S at the right edge of the 1st first unit circuit and the source electrode S at the left edge of the 2nd first unit circuit are shared.

Please replace the paragraph, beginning at page 29, line 23, with the following rewritten paragraph:

It was described that, in the configuration shown in Figs. 1(a)-1(b), the first semiconductor device has the configuration in which the gate electrodes G1 are placed on both sides of the drain electrode D1 respectively. However, the first semiconductor device may have the configuration in which the gate electrode G1 is placed on one side of the drain electrode D1. In that case, the first semiconductor device has one source electrode adjacent to the gate electrode G1. The second semiconductor device also has the same configuration as the first semiconductor device.

Please replace the paragraph, beginning at page 31, line 9, with the following rewritten paragraph:

Fig. 2(a) is a plan view (~~Fig. 2(a)~~) and Fig. 2(b) is a sectional view (~~Fig. 2(b)~~) showing the configuration of the multi-finger type semiconductor differential circuit according to a second embodiment of the present invention. The semiconductor differential circuit shown in Figs. 2(a)-2(b) has the source electrode S which is an example of a third source electrode of the present invention formed on the semiconductor substrate 1, the gate electrode G1 which is an example of the first gate electrode of the present invention placed to be adjacent to the source electrode S along the longitudinal direction of the source electrode S, the drain electrode D1 which is an example of the first drain electrode of the present invention placed to be adjacent to the gate electrode G1 on the opposite side to the source electrode S along the longitudinal direction of the gate electrode G1, the drain electrode D2 which is an example of the second drain electrode of the present invention placed close to the drain electrode D1 on the opposite side to the gate electrode G1 along the longitudinal direction of the drain electrode D1, and the gate electrode G2 which is an example of the second gate electrode of the present invention placed to be adjacent to the drain electrode D2 on the opposite side to the drain electrode D1 along the longitudinal direction of the drain electrode D2.

Please replace the paragraph, beginning at page 33, line 1, with the following rewritten paragraph:

The configuration shown in Figs. 2(a)-2(b) shows an example in which two second unit circuits are placed. However, the semiconductor differential circuit of this embodiment may be comprising n pieces (n is 2 or more) of second unit circuit. In that case, an $i + 1$ -th second unit circuit should be placed to be adjacent to an i -th (i is between 1 and $n - 1$) second unit circuit. And the gate electrode G2 of the i -th second unit circuit should be placed to be adjacent to the source electrode S of the $i + 1$ -th unit circuit.

Please replace the paragraph, beginning at page 39, line 19, with the following rewritten paragraph:

Figs. 6(a)-6(b) are ~~is a~~ sectional views showing the configuration of the semiconductor differential circuit according to a fourth embodiment of the present invention. The semiconductor differential circuit of this embodiment is the semiconductor differential circuit according to the first to third embodiments constituted by bipolar transistors. As for the semiconductor differential circuit shown in Fig. 6 (a), a collector C1 as an example of a first collector of the present invention is formed like a well on the semiconductor substrate 1, a base B1 as an example of a first base of the present invention is formed like a well on the collector C1, and an emitter E is formed like a well on the base B1. In this case, one of the differential signals is inputted to the collector C1, and the collector C1, base B1 and emitter E are forming the first semiconductor device of the present invention.

Please replace the paragraph, beginning at page 41, line 9, with the following rewritten paragraph:

Fig. 6 (b) shows the semiconductor differential circuit ~~constituted~~ formed by bipolar transistors of another example. As for the semiconductor differential circuit shown in Fig. 6 (b), the first semiconductor and second semiconductor are placed so that the collectors thereof are repeatedly placed in order of C1, C2, C1 and C2. According to such a configuration, more electrical midpoints 4' are formed compared to the case according to the configuration shown in Fig. 6 (a) so as to provide the oscillator and amplifier with further reduced characteristic deterioration.

Please replace the paragraph, beginning at page 42, line 8, with the following rewritten paragraph:

It is also ~~thinkable~~ possible, as shown in Fig. 8, to diagonally place the base B1 and base B1' to which one of the differential signals is conveyed and diagonally place the base B2 and base B2' to which the other of the differential signals is conveyed. The same effect as above can be obtained from such a configuration.

Please replace the paragraph, beginning at page 46, line 18, with the following rewritten paragraph:

Next, the configuration of the MOSFETs 1903 to 1906 will be described. Fig. 20 (a) is a plan view of the MOSFETs 1903 to 1906, and Fig. 20 (b) is a sectional view thereof. In these

drawings, S1, S2, G1, G2, D1 and D2 are equivalent to the electrodes of the same reference numerals in Fig. 19. A unit cell (corresponding to the third unit circuit of the present invention) is in the broken line in Fig. 20 (a), which is repeatedly placed.